

Human dimensions of wildlife primer

A brief snapshot of the state of the social science

This summary was put together for Montana's Grizzly Bear Council by the Human Dimensions Lab at the University of Montana to give a brief overview on the human-wildlife coexistence literature. Key questions that social scientists study include:

- What is tolerance and how do we measure it?
- What drives tolerance or acceptance of wildlife and wildlife management?
- How do people respond differently to different species?
- Will public education improve human-wildlife coexistence?

Defining tolerance

People define and use the word “tolerance” in different ways. Sometimes people use tolerance to mean **attitudes** towards wildlife, which can be positive, neutral, or negative judgements (Bruskotter, Singh, Fulton, & Slagle, 2015). Sometimes people use tolerance to mean feelings and **beliefs** about how things should be or what is acceptable (Inskip, Carter, Riley, Roberts, & MacMillan, 2016). Others define tolerance as the neutral midpoint on a continuum of **behaviors** – active intolerance might be demonstrated through killing problem animals, tolerance might be demonstrated through inaction, and active stewardship might be demonstrated through conservation activities (Bruskotter & Fulton, 2012). Brenner & Metcalf (2019) describe tolerance along two axes: attitudes towards wildlife and beliefs about acceptability (Figure 1).

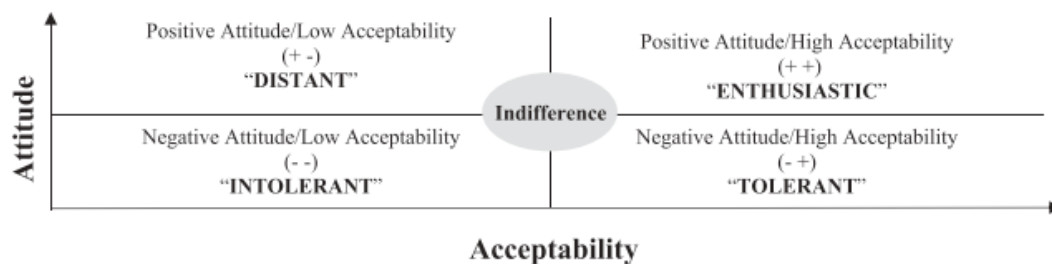


Figure 1: Attitudes and acceptability of wildlife typologies proposed by Brenner & Metcalf (2019).

Drivers of tolerance

Bruskotter & Wilson (2014) reviewed how tolerance or acceptance of large carnivores in individual people is influenced by psychological factors. They found that perceptions of **benefits and risks** were most important in driving tolerance/acceptance, followed by individual **control** over the hazard, **trust** in the management agency, and affect (i.e., **emotion**) for the species (Figure 2).

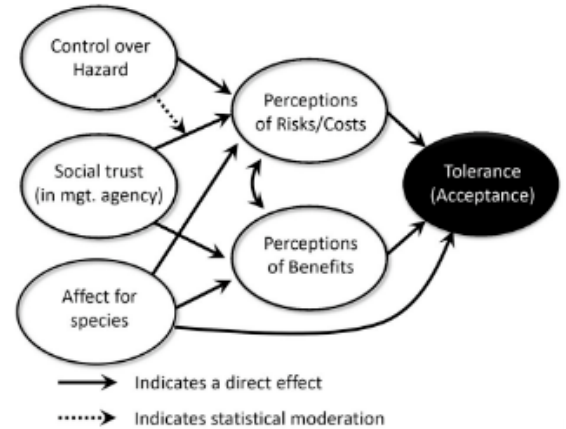


Figure 2: Conceptual model proposed by Bruskotter & Wilson (2014)

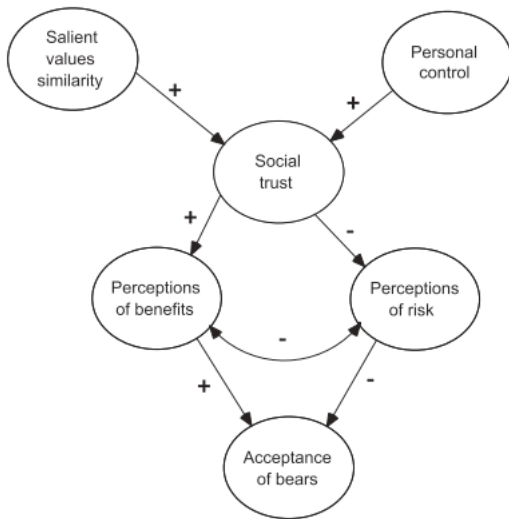


Figure 3: Conceptual model tested by Zajac et al. (2012).

Zajac, Bruskotter, Wilson, & Prange (2012) studied how psychological factors drive acceptance of black bears in Ohio. They found that **risk perception** was the largest driver of black bear acceptance, followed closely by **benefits perception**. They also found that people who (a) felt they had personal **control** over their interactions with black bears and wildlife more broadly, and (b) **trusted** the wildlife agency to manage black bears, were more likely to perceive higher benefits and lower risks of black bears and were more accepting of black bears (Figure 3).

Sponarski, Vaske, Bath, & Musiani (2014) tested how **attitudes** towards wolves in Alberta and support for wolf management are influenced by perceptions of **shared values** and **trust** in the management agency. They found that those who felt they shared values with the agency tended to trust the agency more and have a more positive attitude towards wolves. Those that had a more positive attitude towards wolves were more supportive of agency management actions (Figure 4).

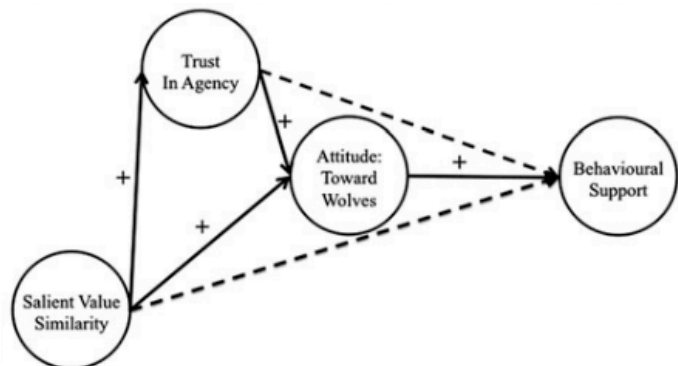


Figure 4: Conceptual model tested by Sponarski et al. (2014).

Sponarski, Vaske, & Bath (2015) examined how individual **beliefs**, **attitudes**, and **emotional disposition** towards coyotes in Nova Scotia influenced the acceptability of killing a coyote. They evaluated the acceptability of killing a coyote under three different scenarios of increasing severity. They found that symbolic beliefs and emotional disposition were the strongest drivers of lethal control acceptability (Figure 5).

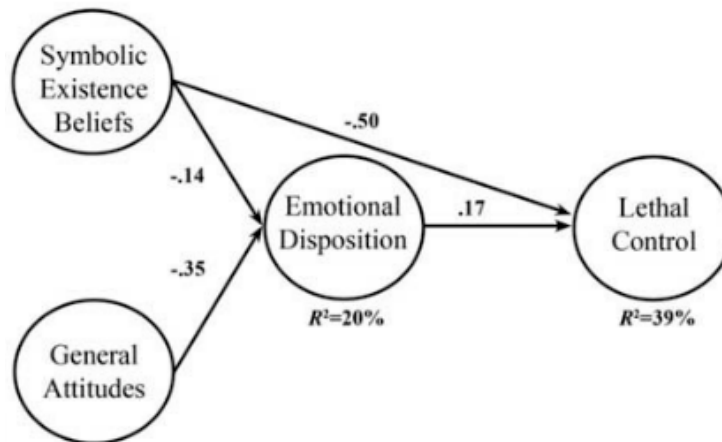


Figure 5: Conceptual model tested by Sponarski et al. (2015).

Bjerke, Vittersø, & Kaltenborn (2000) looked at how **locus of control** influences **attitudes** towards large carnivores in Norway. “Locus of control” is a belief that individuals hold about whether their condition is under their control (i.e., an internal locus of control) or whether their condition is under the control of outside forces such as fate or other people (i.e., an external locus of control). They found that sheep farmers and biologists who had an external locus of control tended to have negative attitudes towards large carnivores.

Species matter, sometimes

Kleiven, Bjerke, & Kaltenborn (2004) examined attitudes of large carnivores (wolves, bears, lynx, and wolverines) and the **acceptability** of them being in certain locations in Norway. They found that it was more acceptable for lynx and wolverines to be near humans than wolves and bears (Figure 6).

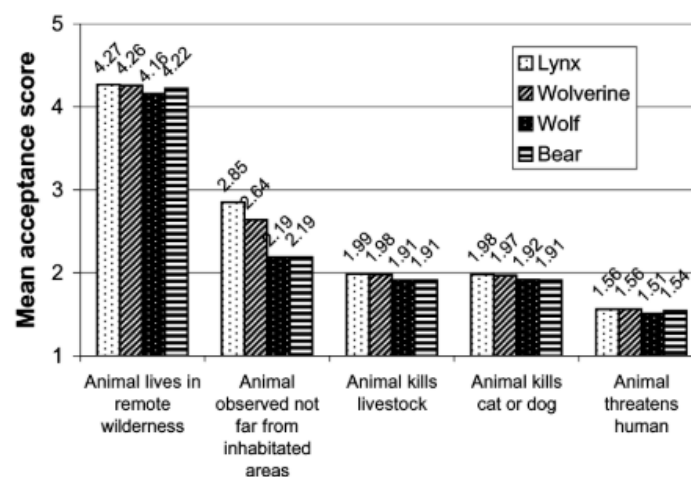


Figure 6: Average acceptability scores of each species across different scenarios in Norway, from Kleiven et al. (2004).

Educating effectively

Education and outreach programs designed to reduce conflict with wildlife are rarely tested to determine their effectiveness (Gore et al., 2016). Young (2018) examined the effectiveness of different education messages to encourage use of bear-proof storage containers in parks in Colorado. She found that individuals who thought that people around them were storing food properly were more likely to use bear-proof storage containers. Education and outreach programs that simply discuss the risks of bears may be less effective at reducing conflict. It's possible that education efforts that also include information about what other people are doing (i.e., norms) may be more effective at reducing conflict (Dietsch, Slagle, Baruch-Mordo, Breck, & Ciarniello, 2018). Knowledge does not necessarily change attitudes or behavior.

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